

Patent claims

1. Arrangement for cooling a piston (2) in a combustion engine (1) of piston and cylinder type with a nozzle (3) installed in a crankcase in order to spray cooling oil
5 (7) towards the underside of the piston (2), and incorporating devices (4,5,6) for supplying oil to the nozzle (3), **characterised** in that the nozzle (3) exhibits an outlet aperture (12,12') in the form of an outlet slit which is curved in cross-section.
2. Arrangement according to claim 1, **characterised** in that the nozzle (3)
10 forms part of an integrated pipe section (4) which also includes a fastening-in portion.
3. Arrangement according to claim 1 or 2, **characterised** in that the cross-section of the outlet aperture (12,12') is substantially U-shaped or C-shaped.
- 15 4. Arrangement according to claim 1, 2 or 3, **characterised** in that the outlet section of the nozzle is formed by plastic forming of a pipe blank about a mandrel which defines the shape of the outlet aperture so that one pipe wall portion comes to form an inner, and another pipe wall portion an outer, delineation for the nozzle's outlet aperture.
- 20 5. Arrangement according to claim 2 or claims 2 and 3 or claim 4, **characterised** in that the pipe section has a curved extent such that a first part of it incorporating the outlet is oriented in said direction and a second part of it incorporating the fastening-in portion is oriented at an angle thereto.
- 25 6. Method for producing a nozzle for spraying cooling oil towards the underside of a piston for a combustion engine, **characterised** in that a mandrel of elongate and curved cross-section is inserted into one end of a blank consisting of a metal pipe section, which end is intended to become the nozzle's outlet end, this insertion being followed by the pipe walls being pressed against the mandrel so that they assume, by
30 plastic forming process, an internal cross-section corresponding to the mandrel's cross-section, and by subsequent extraction of the mandrel from the pipe section and any final treatment of the nozzle, such as grinding.

7. Method according to claim 5, **characterised** by the pipe walls being pressed against a mandrel of substantially U-shaped or C-shaped cross-section.
8. Method according to claim 5 or 6, **characterised** by the pipe walls being
5 pressed against the mandrel by rolling pressing.